first and second mixtures, and obtaining a numerical value proportional to the inner product of the two vectors from a difference between said R_+ and R_- rates of hybridization.

IN THE ABSTRACT:

Replace the filed abstract with the attached.

REMARKS

With entry of this amendment, claims 9-13, and 18-37 are pending. Applicants acknowledge with appreciation the Examiner's indication that claims 9-13 are allowed. Reconsideration of claims 18-24, 27 and 28 and consideration of new claims 36 and 37 is respectfully requested. Claims 36 and 37 replace cancelled claims 15 and 17. Support for the claims can be found throughout the specification and they contain no new matter. Amendment has been made to overcome indefiniteness rejections.

Claim 15 was rejected as containing new matter. It appears to be the Examiner's view that insufficient information has been provided regarding vector manipulation, especially wherein m $\neq$ n, and that such embodiments are therefore new matter. To the extent that this rejection is considered applicable to claim 36, it is respectfully traversed for the following reasons.

Vector manipulation as described and recited in the presently pending claims is well known in the art. The outer product matrix of two vectors of different dimensions (m $\neq$ n) is obtained by calculating the products of all possible combinations of the elements of the vectors. In the case of the present invention, the outer product is obtained by forming dimeric oligomers from combinations of single stranded oligomers that represent the elements of the respective vectors. This is clearly recited in claim 36, which has replaced claim 15. Withdrawal of the rejection is respectfully requested.

Claims 15, 17-24, 27 and 28 were rejected under 35 USC § 112, second paragraph, as being indefinite. Claims 15 and 17 have been rewritten as claims 36 and 37.

New claim 36 depends from claim 9 and clearly recites the steps for obtaining an outer product vector, as described above. The matrix elements are represented by the

concentrations of the dimeric oligomers. In new claim 37, a clerical error in line 16 has been corrected so that the claim properly recites "the outer products $V_i^a V_j^a$ for $i \neq j$". Parts (a) and (b) of the claim have been amended to overcome the indefiniteness rejections set forth at pages 6 and 7 of the Office Action. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 20 and 21 have been cancelled, thereby rendering the rejections to these claims moot.

The Examiner has taken the position that claim 27 is not commensurate is scope with the inner product method as set forth in the specification on pages 31-33. Claim 27 has been rewritten to more clearly specify that the inner product is obtained by the difference between the rates of hybridization R+ and R-. Withdrawal of the rejection is respectfully requested.

The Examiner has taken the position that claim 28 lacks commensurate method steps to those given at pages 36-39 of the specification. Claim 28 has been cancelled, thereby rendering this rejection moot.

The Examiner objected to the title and abstract. The title has been changed and a new abstract is submitted herewith. Withdrawal of the objection is respectfully requested.

All objections and rejections having been addressed, it is submitted that the application is in condition for allowance and Notice to that effect is respectfully requested.

Respectfully submitted,

Date: <u>July 24, 2002</u>

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